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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/594,754	02/28/2007	Hisashi Inaba	1034290-000007	3796

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EXAMINER	
HUANG, WEN WU	

ART UNIT	PAPER NUMBER
2618	

NOTIFICATION DATE	DELIVERY MODE
02/09/2009	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

ADIPFDD@bipc.com

Office Action Summary	Application No.	Applicant(s)	
	10/594,754	INABA ET AL.	
	Examiner	Art Unit	
	WEN W. HUANG	2618	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *29 December 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *13,14 and 16-32* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *13,14 and 16-32* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 12/29/08 has been entered.

Claims 13, 14 and 16-32 are pending.

Claims 1-12 and 15 are canceled.

Claim Objections

Claims 25-28 are objected to because of the following informalities:

Claims 25-28 are dependant of a canceled claim 15.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States

only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

1. Claims 13, 17 and 25 are rejected under 35 U.S.C. 102(e) as being anticipated by Roz et al. (US. Pub. No. 2004/0178882 A1; hereinafter "Roz").

Regarding **claim 13**, Roz teaches an on-vehicle radio device (see Roz, fig. 2, car control device 12) that acquires identification information for unlocking a lock device of a vehicle (see Roz, para. [0023], Low Frequency LF identification signal) from a portable radio device having said identification information recorded therein by radio communication with said portable radio device (see Roz, fig. 3, transponder 16), comprising:

human detection means of detecting a person (see Roz, para. [0031], car control device 12 receives HF message in HF listening mode for activation of LF transmission; fig. 1, HF range 4);

variable frequency signal generating means of generating a variable frequency signal for said radio communication (see Roz, fig. 2, data management circuit 20 generating High Frequency signal or Low Frequency signal for communication; para. [0021] and [0036], at first and second different frequencies within HF band);

band changing means of changing the frequency band of a signal generated by said variable frequency signal generating means (see Roz, fig. 2, HF tx/rx 22 and 23, LF tx 24) in a case in which an on-vehicle radio device has not yet acquired the identification information recorded in the portable radio device (see Roz, fig. 1, para. [0008], transponder 10 outside of LF range 2, but inside or HF range 4) when the

person carrying the portable radio device having the identification information recorded therein is detected by the human detection means (see Roz, fig. 1, transponder 10 detected by HF listening mode, para. [0031]);

radio transmitting means of transmitting the signal generated by said variable frequency signal generating means to the outer space (see Roz, fig. 2 antennas 23 and 25); and

transmission characteristics changing means of changing the transmission characteristics of said radio transmitting means to transmission characteristics adapted to the frequency band of the signal generated by said variable frequency signal generating means changed by said band changing means (see Roz, fig. 2, power management circuit 28 and data management circuit 20; para. [0032], activation of LF transmission; transmission characteristics changed from HF to LF).

Regarding **claim 17**, Roz teaches the on-vehicle radio device according to claim 13, wherein the frequency band of a signal transmitted from said portable radio device to said on-vehicle radio device (see Roz, fig. 3, HF transmission circuit 40) is set higher than the frequency of the signal transmitted from said on-vehicle radio device to said portable radio device (see Roz, fig. 2, LF transmission circuit 24).

Regarding **claim 25**, the dependent claim is interpreted and rejected for the same reason as set forth above in claim 17.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 18-20 and 26-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Roz as applied to claim 13 above, and further in view of Grandfield et al. (US. 4,791,377; hereinafter "Grandfield").

Regarding **claim 18**, Roz teaches the on-vehicle radio device according to claim 13, wherein said variable frequency signal generating means generates the signal to be transmitted to said portable radio device (see Roz, fig. 3, HF transmission circuit 32 and LF transmission circuit 24).

Roz is silent to teaching that wherein said variable frequency signal generating means generates the signal based on discrete variable values of a sine function stored in a table. However, the claimed limitation is well known in the art as evidenced by Grandfield.

In the related art, Grandfield teaches a variable frequency signal generating means (see Grandfield, fig. 2, numerical controlled oscillator 21) generates the signal based on discrete variable values of a sine function stored in a table (see Grandfield, col. 3, lines 60-68).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to combine the teaching of Roz with the teaching of Grandfield in order to allow fast frequency selection (see Grandfield, col. 1, lines 25-28).

Regarding **claim 19**, Roz teaches the on-vehicle radio device according to claim 13, wherein said variable frequency signal generating means modulates a predetermined code with the carrier wave (see Roz, para. [0031], LF transmission sends interrogation signal; para. [0035], HF transmission sends acknowledgement signal), thereby generating the signal to be transmitted to said portable radio device (see Roz, fig. 3, HF transmission circuit 32 and LF transmission circuit 24).

Roz is silent to teaching that wherein said variable frequency signal generating means generates a carrier wave based on discrete variable values of a sine function stored in a table. However, the claimed limitation is well known in the art as evidenced by Grandfield.

In the related art, Grandfield teaches a variable frequency signal generating means (see Grandfield, fig. 2, numerical controlled oscillator 21) generates a carrier wave based on discrete variable values of a sine function stored in a table (see Grandfield, col. 3, lines 60-68).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to combine the teaching of Roz with the teaching of Grandfield in order to allow fast frequency selection (see Grandfield, col. 1, lines 25-28).

Regarding **claim 20**, Roz teaches the on-vehicle radio device according to claim 13.

Roz is silent to teaching that wherein said band changing means has a digital filter that removes a frequency band that is not necessary for transmission to said portable radio device based on a predetermined coefficient and changes said coefficient in accordance with the changed frequency band of the signal generated by said variable frequency signal generating means. However, the claimed limitation is well known in the art as evidenced by Grandfield.

In the related art, Grandfield teaches a band changing means has a digital filter that removes a frequency band that is not necessary for transmission to said portable radio device (see Grandfield, fig. 3, variable band pass filter 37) based on a predetermined coefficient and changes said coefficient in accordance with the changed frequency band of the signal generated by said variable frequency signal generating means (see Grandfield, col. 4, lines 38-48).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to combine the teaching of Dykema and Rohrl with the teaching of Grandfield in order to allow fast frequency selection (see Grandfield, col. 1, lines 25-28).

Regarding **claims 26-28**, the dependent claims are interpreted and rejected for the same reasons as set forth above in claims 18-20, respectively.

3. Claims 14, 16, 21 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dykema et al. (US. 6,091,343; hereinafter "Dykema") in view of Perraud et al. (US. 6,603,388 B1; hereinafter "Perraud")

Regarding **claim 14**, Dykema teaches an on-vehicle radio device (see Dykema, fig. 1) that acquires information for unlocking a lock device of a vehicle from a portable radio device by radio communication with said portable radio device (see Dykema, col. 2, lines 7-11), comprising:

radio wave measuring means of measuring radio wave intensity in the outer space of said on-vehicle radio device for each of predetermined frequency bands (see Dykema, fig. 5, receiving antenna 130);

variable frequency signal generating means of generating a variable frequency signal for said radio communication (see Dykema, fig. 5, signal generating circuit 200 and fig. 6, voltage controlled oscillator VCO 202);

band changing means of changing the frequency band of a signal generated by said variable frequency signal generating means to one of the frequency bands (see Dykema, fig. 5, frequency synthesis and control circuit 160 and 165, col. 6, lines 60-65);

radio transmitting means of transmitting the signal generated by said variable frequency signal generating means to the outer space (see Dykema, fig. 5, transmit antennas 240 and 250); and

transmission characteristics changing means of changing the transmission characteristics of said radio transmitting means to transmission characteristics adapted

to the frequency band of the signal generated by said variable frequency signal generating means changed by said band changing means (see Dykema, fig. 5, antenna select switch 230; col. 15, lines 30-40).

Dykema is silent to teaching that wherein:

the on-vehicle radio device acquires identification information from a portable radio device having said identification information recorded therein, and

said band changing means of changing the frequency band to a frequency band in which the radio wave intensity in the outer space of the on-vehicle radio device is lowest from amongst the predetermined frequency bands. However, the claimed limitation is well known in the art as evidenced by Perraud.

In the same field of endeavor, Perraud teaches an on-vehicle radio device (see Perraud, fig. 2, col. 2, lines 40-43, vehicle 110, security controller 150) acquires identification information from a portable radio device having said identification information recorded therein (see Perraud, col. 2, lines 15-24, remote keyless entry RKE), and

said band changing means of changing the frequency band to a frequency band (see Perraud, col. 4, lines 6-11; security controller 150 selects the sub-channel based on real-time interference of all sub-channels available) in which the radio wave intensity in the outer space of the on-vehicle radio device is lowest from amongst the predetermined frequency bands (see Perraud, col. 4, lines 14-28, least interference and col. 4, lines 20-24, lowest signal level).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to combine the teaching of Dykema with the teaching of Perraud in order to avoid data collision and interference in HF band (see Perraud, col. 1, lines 31-45 and col. 3, lines 10-13).

Regarding **claim 16**, the combination of Dykema and Perraud teaches the on-vehicle radio device according to claim 14, wherein said radio measuring means measures radio wave intensity when said on-vehicle radio device is in a transmission wait state (see Perraud, fig. 4, wait state 510, col. 4, lines 40-45).

Regarding **claim 21**, the combination of Dykema and Perraud teaches the on-vehicle radio device according to claim 14, wherein the frequency band of a signal transmitted from said portable radio device to said on-vehicle radio device (see Perraud, col. 2, lines 59-62, unlock signal at HF band) is set higher than the frequency of the signal transmitted from said on-vehicle radio device to said portable radio device (see Perraud, col. 2, lines 55-56, interrogation signal at LF band).

Regarding **claim 29**, the dependent claim is interpreted and rejected for the same reason as set forth above in claim 21.

4. Claims 22-24 and 30-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dykema and Perraud as applied to claims14 and 16 above, and further in view of Grandfield.

Regarding **claim 22**, the combination of Dykema and Perraud teaches the on-vehicle radio device according to claim 14, wherein said variable frequency signal generating means generates the signal to be transmitted to said portable radio device (see Dykema, fig. 5, modulation circuit 220, transmit antennas 240 and 250).

The combination of Dykema and Perraud is silent to teaching that wherein said variable frequency signal generating means generates the signal based on discrete variable values of a sine function stored in a table. However, the claimed limitation is well known in the art as evidenced by Grandfield.

In the related art, Grandfield teaches a variable frequency signal generating means (see Grandfield, fig. 2, numerical controlled oscillator 21) generates the signal based on discrete variable values of a sine function stored in a table (see Grandfield, col. 3, lines 60-68).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to combine the teaching of Dykema and Perraud with the teaching of Grandfield in order to allow fast frequency selection (see Grandfield, col. 1, lines 25-28).

Regarding **claim 23**, the combination of Dykema and Perraud teaches the on-vehicle radio device according to claim 14, wherein said variable frequency signal generating means modulates a predetermined code with the carrier wave, thereby generating the signal to be transmitted to said portable radio device (see Dykema, fig. 5, modulation circuit 220, transmit antennas 240 and 250).

The combination of Dykema and Perraud is silent to teaching that wherein said variable frequency signal generating means generates a carrier wave based on discrete variable values of a sine function stored in a table. However, the claimed limitation is well known in the art as evidenced by Grandfield.

In the related art, Grandfield teaches a variable frequency signal generating means (see Grandfield, fig. 2, numerical controlled oscillator 21) generates a carrier wave based on discrete variable values of a sine function stored in a table (see Grandfield, col. 3, lines 60-68).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to combine the teaching of Dykema and Perraud with the teaching of Grandfield in order to allow fast frequency selection (see Grandfield, col. 1, lines 25-28).

Regarding **claim 24**, the combination of Dykema and Perraud teaches the on-vehicle radio device according to claim 14.

The combination of Dykema and Perraud is silent to teaching that wherein said band changing means has a digital filter that removes a frequency band that is not

necessary for transmission to said portable radio device based on a predetermined coefficient and changes said coefficient in accordance with the changed frequency band of the signal generated by said variable frequency signal generating means. However, the claimed limitation is well known in the art as evidenced by Grandfield.

In the related art, Grandfield teaches a band changing means has a digital filter that removes a frequency band that is not necessary for transmission to said portable radio device (see Grandfield, fig. 3, variable band pass filter 37) based on a predetermined coefficient and changes said coefficient in accordance with the changed frequency band of the signal generated by said variable frequency signal generating means (see Grandfield, col. 4, lines 38-48).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to combine the teaching of Dykema and Perraud with the teaching of Grandfield in order to allow fast frequency selection (see Grandfield, col. 1, lines 25-28).

Regarding **claims 30-32**, the dependent claims are interpreted and rejected for the same reasons as set forth above in claims 22-24, respectively.

Response to Arguments

Applicant's arguments with respect to claims 13 and 14 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to WEN W. HUANG whose telephone number is (571)272-7852. The examiner can normally be reached on 10am - 6pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew D. Anderson can be reached on (571) 272-4177. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/W. W. H./
Examiner, Art Unit 2618

/Matthew D. Anderson/

Supervisory Patent Examiner, Art Unit 2618